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NEW EVIDENCE SUPPORTS EXISTENCE OF PYGMY ELEPHANT



A pygmy elephant shot by Captain Chicharro in Equatorial Guinea in September, 1957. The specimen was only 6.5 feet (2m) tall at the shoulder, but was described as an adult with 28-29-inch (71-71-cm) tusks. German zoologists Martin Eisentraut and Wolfgang Bohme have reviewed evidence for the often-dismissed pygmy elephant, concluding that it is a real animal—a second species of African elephant. (A. Basilio.)

The legendary pygmy elephant of Africa—the existence of which has been repeatedly denied by zoologists—has been resuscitated and elevated once again to species status by two German zoologists.

Martin Eisentraut and Wolfgang Bohme, of the Alexander Koenig Zoological Research Institute and Museum, in Bonn, analyzed anatomical, behavioral, and eyewitness evidence to reach their startling new conclusion. If their findings are correct, as they appear to be, it means that the world of zoology—and wildlife conservation—will be faced with the fact that there are two distinct species of elephant in Africa.

Although six subspecies of the African elephant, *Loxodonta africana*, have been described at different times, mainly around the turn of the century, only two subspecies are generally recognized today. One is the larger bush or savannah elephant, *L. a. africana*, found mainly in Southern and East Africa. It is the largest and heaviest living land animal known, standing 9 to 13 feet (2.7-4m) tall at the shoulder. The largest

specimen on record, now on display at the U.S. National Museum, is a male which weighed 22,050lb (almost 10,000kg) and stood over 13 feet (4m). The other subspecies is the smaller forest elephant, *L. a. cyclotis*, of Central and West Africa.

The pygmy elephant has been thought by many to be something else altogether. It was early in the century that German zoologist Theodore Noack, convinced that a pygmy elephant existed as a distinct species, described and named it *Loxodonta pumilio*, based on a living specimen (1906, *A Dwarf Form of the African Elephant*, *Annals and Magazine of Natural History*, Ser. 7, Vol. 17: 501-3). One of the main differences of Noack's new species was, of course, size. While the forest elephant subspecies stands between 7.5 and 9 feet (2.3-2.7m) tall at the shoulder, the pygmy elephant is reported to stand only between 5 and 6.5 feet (1.6-2m) tall.

Noack's type specimen had been received by the famous animal collector Carl Hagenbeck. Although it was said to be 6 years old, it stood only 6 feet

(1.8m) tall, the size of an 18-month-old forest elephant. The animal ended up in New York's Bronx Zoo, where it lived another 9 years, eventually growing to 6.5 feet (2m) before dying of a leg disease. William T. Hornaday, the zoo director at the time, remained convinced that the specimen was a real pygmy elephant. Others, however, have proposed that it was merely a forest elephant that remained stunted by the disease which finally killed it.

In 1911, reports of small "water" elephants prompted a Belgian officer, Lieutenant Franssen, to search for them, and, after much hardship, he came out of the Belgian Congo (now Zaire) swamps with a specimen 5 feet, 5 inches (1.6m) tall, which went to the Royal Museum of Central Africa, in Tervuren, Belgium. Its tusks were over 2 feet (60cm) long. Henri Schoutenden described the species as Loxodonta fransseni in 1914, but, as pointed out in the 1950's by French zoologist Bernard Heuvelmans, the animal was almost certainly a pygmy elephant, already described as L. pumilio.

Pygmy elephant reports continued to be made the 1920's, and in 1932, Major P. Offerman, at Gangala-na-Bodio, Zaire, reported the capture of two specimens, both between 4 and 5 feet (1.2-1.5m) tall, but with "long and stout tusks almost touching the ground." This last description is very important, as one of the main arguments which has been used to dismiss the existence of the pygmy elephant is that the small animals seen are merely juveniles of the forest elephant; however, juveniles are not thought to have such large tusks.

Soon afterwards, Glover M. Allen, an American zoologist, reviewed the African elephant situation, and again concluded that pygmy elephants were merely juveniles of the forest elephant (1932, The Forest Elephant of Africa, Proceedings of the Academy of Natural Sciences of Philadelphia, Vol 88: 15-44).

But this did not end the story by any means. In 1948, French mammalogists Edouard Bourdelle and Francis Petter were able to study a specimen killed in Gabon, which convinced them of its species status (1950, Notes Relatives a un Elephant Nain du Gabon [Notes on a Dwarf Elephant from Gabon], Mam-

malia, Vol. 14). This animal was quite old, but stood only 6 feet, 5 inches (1.8m) tall. Lucien Blancou, chief game warden of France's African colonies, who had studied all the mammals of Central Africa for many years, was also convinced of the reality of the pygmy elephant (1950, L'Elephant Nain [The Dwarf Elephant], Mammalia, Vol. 14; 1962, A Propos des Formes Naines de l'Elephant d'Afrique [On the Dwarf Forms of the African Elephant], Mammalia, Vol. 26).

However, most zoologists continued to reject the existence of such a species, prompting Bernard Heuvelmans to state --when reviewing the subject in his classic On the Track of Unknown Animals (1958, Hill and Wang, New York)--that they do this with "no justification, especially when one recalls how ready they are to create new species or subspecies, distinguished only the slightest difference in color or a few extra whiskers." Heuvelmans, who now serves as ISC President, included the pygmy elephant in his recent cryptozoological checklist (1986, Annotated Checklist of Apparently Unknown Animals with which Cryptozoology is Concerned, Cryptozoology, Vol. 5: 1-26); however, he now considers the form to be only a subspecies--just like the bush and forest elephants--which would change its scientific name to Loxodonta africana pumilio. Thus, Heuvelmans' most recent proposal is actually more conservative than the new claim by Eisentraut and Bohme.

What has been the recent zoological thinking on the pygmy elephant? A review of the literature is not very encouraging. German zoologist Bernhard Grzimek, in his classic 13-volume Animal Life Encyclopedia (1975, Van Nostrand Reinhold, New York; originally published in Germany in 1972), states that, because there are no regions in Africa populated solely by pygmy elephants, and because they "do not occur in herds," they are "not a distinct species or subspecies but just unusually small individuals." The Field Guide to the Larger Mammals of Africa, by French zoologists Jean Dorst and Pierre Dandelot (1972, Collins, London, 2nd ed., & reprints through 1984) states that its "recognition as a different species does not seem justified...It is probably better to consider them merely as an

ecological subspecies, adapted to an unfavorable habitat and therefore of much smaller size."

The African elephant account in the Mammalian Species series published by the American Society of Mammalogists, by Larry Laursen and Marc Bekoff (1978, No. 92), merely states that "the existence of distinct 'pygmy' elephants and 'water' elephants is unproven." Likewise, the comprehensive volume Walker's Mammals of the World, by American zoologists Ron M. Nowak and John L. Paradiso, eds. (1983, Johns Hopkins, Baltimore, 4th ed.), states that "most authorities...believe that the so-called pygmy elephants are merely small individuals of L. africana." The elephant section by American mammalogists Daryl P. Domning and Jeheskel Shoshani in the definitive Mammal Species of the World (1982, Allen Press/Association of Systematic Collections, Lawrence, Kansas)--the mammalogist's taxonomic bible--mentions pumilio as a "junior synonym of cyclotis," and does not include it as a species.

The elephant chapter by Richard F.W. Barnes in the lengthy, popular volume The Encyclopedia of Mammals (1984, Equinox, Oxford) also mentions the pygmy elephant, but states that "the current view is that they are merely abnormally small individuals which occasionally appear at random in herds of normal sized-individuals." And, finally, the pygmy elephant is not included in the authoritative A World List of Mammalian Species by British zoologists Gordon B. Corbet and John E. Hill (1986, British Museum [Natural History], London).

The only recent authoritative work which tentatively accepts the pygmy elephant as a species is A Field Guide to the Mammals of Africa Including Madagascar (1980, 1984, Collins, London; originally published in Germany in 1977), by Theodor Haltenorth and Helmut Diller (perhaps not surprisingly, as Haltenorth, a German zoologist, was a supporter of cryptozoological research and was a candidate for the ISC Board of Directors prior to its founding--unfortunately, he died before the Society's formal creation).

In their book, Haltenorth and Diller include a species section on the pygmy

elephant, describing it as "the least known large animal in Africa." Their account states it may be found "in troops (10-20) and herds (50-70) of adults and young...in swampy forests. Locally remains apart from forest elephant...said to be more aggressive; in some regions hunted by preference by pygmies whom it fears." They also cautioned that "the existence of a species of pygmy elephant is not generally recognized."

More recently, a new and negative review of the pygmy elephant was published by David Western, of the New York Zoological Society's Wildlife Conservation International (1986, *The Pygmy Elephant: A Myth and a Mystery, Pachyderm*, [Newsletter of the Species Survival Commission of the International Union for the Conservation of Nature and Natural Resources], December). Western had undertaken a forest elephant survey in January-February, 1986, and had looked into the pygmy elephant question. The project involved aerial reconnaissance over most of Central Africa, and ground fieldwork in Gabon, Zaïre, and the Central African Republic (C.A.R.). Accompanying him were the well-known writer Peter Matthiessen and Richard Barnes (see above).

Western was able to observe about 120 elephants in three different locations in Gabon and C.A.R. In one clearing, he saw several elephant herds that included small individuals with tusks; these seemed to fit the 1906 description by Noack, and later Haltenorth and Diller. They stood 4.5-6 feet (1.4-1.8m) tall. "However," wrote Western, "I felt sure these were juvenile elephants. None had young of their own. This was confirmed when several adult females entering the clearing were joined by the pygmyelephants, which showed affiliate behavior. I saw this happen on three separate occasions. Each juvenile stayed with its respective female as it left the clearing. Our direct observations confirm...the pygmy elephant is [merely] a juvenile of the forest elephant."

As for the tusks, Western stated that "tusk development is undoubtedly far faster in some forest elephants than in the bush race. Why is unclear. The answer may lie in the calf's early detachment from the mother." And that may be due, he proposes, to higher food

competition in a forest habitat than is found in the savannah habitat of the bush elephant: "Food spacing would therefore be advantageous. That being so, weaned infants with sufficient foraging skills would benefit from extended feeding forays from their parent herd."

"I can well see," Western concluded, "why young forest elephants can be regarded as a race different from and smaller than *cyclotis*. The confusion contributes in part to the belief in a pygmy elephant." Western then stated that he also found the bush elephant present in Central African forests (and, indeed, that there is interbreeding between it and the forest elephant subspecies). Thus, in such cases, there would be two kinds of elephants in the forest: the larger bush elephant --mistakenly thought to be the forest elephant--and the smaller forest elephant --mistakenly thought to be the supposed pygmy elephant. He stated that he did, in fact, see bush and forest elephants mistakenly identified as forest and pygmy elephants by their native guides.

"The Pygmy peoples are correct about there being a big and small race of elephants in the forest," he concluded. "It is the naturalists who have wrongly deduced that two sympatric races of elephant in the forest must mean that there are two races of forest elephant...There is no reason to believe that a pygmy elephant exists."

It was this negative assessment that prompted Martin Eisentraut and Wolfgang Bohme to undertake a thorough investigation of the evidence for this elusive elephantid. In their paper (1989, *Gibt es zwei Elefantenarten in Afrika? [Are There Two Species of Elephant in Africa?]*, *Zeitschrift des Kölner Zoo* [Journal of the Cologne Zoo], Vol. 32[2]: 61-68), they first state: "It is hard to understand why zoologists still disagree over whether there is just one species of elephant in Africa, with the subspecies *Loxodonta africana africana* and *L. a. cyclotis*, or a second species, the pygmy elephant, *Loxodonta pumilio*."

In reviewing the literature, they reject Dorst and Dandelot's proposal of an "ecological subspecies," stating that their explanation "does not conform to modern views of subspeciation because

subspecies are, by definition, allopatric--they do not co-exist in the same geographical area. The argument of...an ecotype resulting from an unfavorable environment is also not acceptable; this allegedly 'starving form' lives in the same biotype as the forest elephant, but favors the moist, thickly overgrown swamp forest, where plant-eaters find an abundance of food...We have to exclude the sympatric subspecies and also the 'starving' forms. The only alternatives are: African pygmy elephants are individual small variants of the forest elephant...or they have to be regarded as a separate species."

The authors then discuss the fieldwork of Ulrich Roeder, an animal collector in Central Africa who retired in 1968. Between 1969 and 1985, he undertook 16 expeditions deep into the forest of southern Cameroon, studying animals and collecting specimens, and he developed a particular interest in the pygmy elephant. On his fourth expedition, he searched for it near the border with Equatorial Guinea, and found many small elephantid footprints, measuring only 10-11 inches (26-29cm).

A year later, he was actually able to inspect a killed male pygmy elephant. His companion, veterinarian Hors Becht, estimated its weight to be only about 3,080lb (1,400kg), and, based on dental evidence, estimated an age of 16-18 years. The tusks measured 29 inches (73cm). Dental evidence, particularly tooth wear, is very important. While a case could be made for juveniles growing tusks at an early age, thus giving the impression of adulthood--as proposed by Western-- age estimates based on dental evidence are fairly reliable, and this goes far towards establishing that pygmy elephants are not merely forest elephant juveniles, but adults--and therefore a separate species.

Roeder always communicated his findings to the Koenig Museum in Bonn, and Eisentraut and Bohme actually met him in Cameroon in 1973. They were impressed by both the soundness of his work and his irrepressible enthusiasm. In August, 1987, as he was planning a new expedition, Roeder died at age 90, leaving his pygmy elephant still unproven.

Eisentraut and Bohme also review

evidence published by Spaniard A. Basilio in a book (1962, *La Vida Animal en la Guinea Espanola* [Animal Life in Spanish Guinea], Madrid). He wrote: "In the interior of the vast forests, we saw trails made by elephant herds, with track sizes no bigger than that of juveniles of the common [forest] elephant (*cyclotis*). We also saw tracks of single elephants, and these were exactly the same size as the tracks of the group-living elephants. However, we never found small elephant tracks mixed with normal-sized elephant tracks, and this clearly indicates group homogeneity."

Basilio also reported that, in September, 1957, a Captain Chicharro killed an adult pygmy elephant 6.5 feet (2m) tall near the River Benito. The tusks measured 28 and 29 inches (71-75cm). "It was not an outsider," wrote Basilio, "but lived in a herd of 21 individuals. All the tracks showed that they all belonged to the same form. The biggest sole-print was smaller than 12 inches (31cm)." Chicharro had previously shot forest elephants, but these had sole-pads measuring from 16 to 20 inches (43 to 51cm). These pygmy elephants were called *esemasas* by the local natives. They called the larger forest elephant *nsok*. They also stated that both kinds may be found individually or in groups, but that the pygmy ones are more aggressive than the larger ones. This is a trait that has been reported by numerous natives peoples in different parts of Central Africa.

Eisentraut and Bohme then refute Western's claim that pygmy elephants

are merely forest elephant juveniles, suggesting that the small animals he observed were not really pygmy elephants at all. "He [Western] had observed how two small--but tusk-bearing--elephants...became integral parts of a group of forest elephant cows. With this presumed 'proof,' he is only describing a typical behavior of elephants: juveniles never form troops or herds, but remain integrated into family groups. His observation is also refuted by the many observations of troops or herds of small elephants, which avoid the larger ones. His further conclusion, that the relatively long tusks of the young animals is an adaptation to more intense competition and food shortage is--as mentioned above--not in accordance with conditions existing in tropical rain forest."

Moving on to anatomy, Eisentraut and Bohme mention how Roeder had often discussed differences in the skulls of pygmy and forest elephants. Thus, Bohme--an ISC member (see *Newsletter*, Autumn, 1989, for his discovery of the Yemen monitor lizard)--suggested that a biometric analysis be undertaken. This was subsequently performed by L. Oberdorfer at the University of Bonn. A correlation matrix and a cluster analysis showed that the differences between the two forms--pygmy and forest--were less than the sex differences within the forest form. This methodology left things uncertain, so instead Eisentraut and Bohme studied the qualitative differences--features rather than measurements--of the pygmy and forest elephant material housed in Belgium's Royal

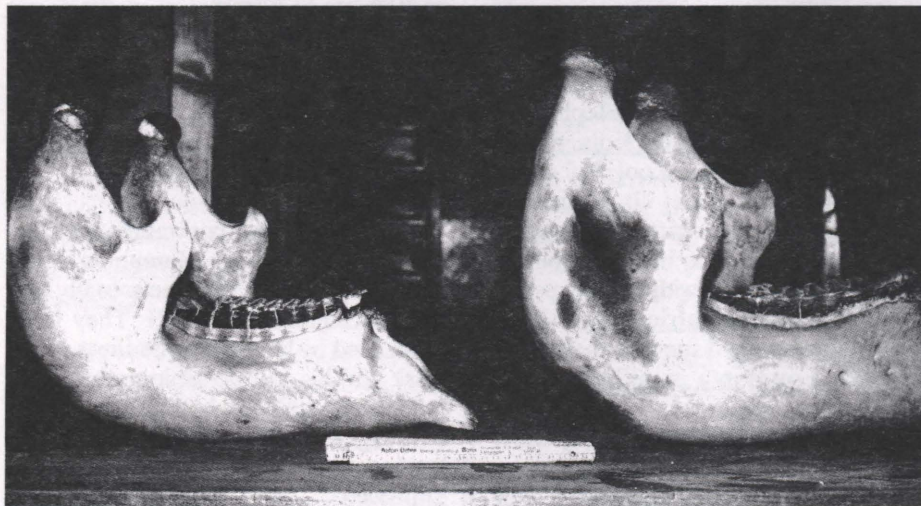
Museum of Central Africa.

"We found, without exception," they state, "that the ramus of the pygmy elephant mandible is very low and gracile--as mentioned by Roeder--contrasting sharply with the high and robust profile found in the forest elephant mandible. This was shown impressively by a particular small mandible--apparently not from a killed elephant, but rather a diseased one, because of the gray coloring (weathering). Because the 6th molar was completely worn down...we are dealing with an individual which undoubtedly had been very old and debilitated, and for which, because of the extreme wearing down of the teeth, the chewing of food was no longer possible. This important specimen, cataloged as No. 9524...is significant evidence that the low profile of the mandible cannot invariably be associated with *L. a. cyclotis* juveniles."

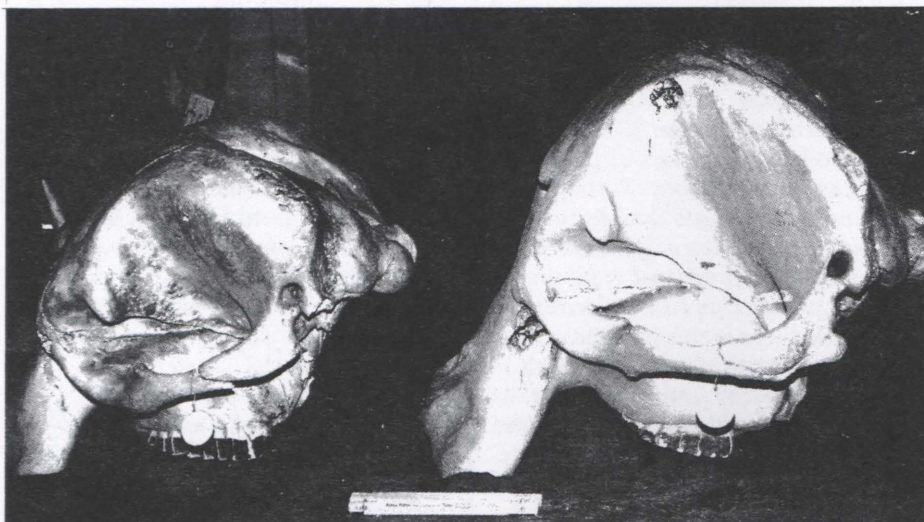
They also found differences when comparing skulls: the frontal in the pygmy elephant is less pronounced than in the forest elephant, with the parietal falling less steeply to the occipital. The orbits are also less "pulled" upwards towards the crest. In the rear, the pygmy elephant skull, although considerably smaller than that of the forest elephant, has a foramen magnum (the round opening for backbone attachment) which is larger both relatively and absolutely.

After these anatomical comparisons, Eisentraut and Bohme discuss new field observations by the German H.J. Steinfurth, who had filmed pygmy elephants in C.A.R. The significance of these observations--and filming--is that a group of forest elephants appeared in a salt clearing with their juveniles, and, after their departure, three pygmy elephants appeared on the other side of the clearing, and all three had relatively long tusks characteristic of adults.

Later, on three occasions, Steinfurth observed pygmy elephants in small clearings in deep forest near the Yobe River, about 30 miles (50km) south of Nola. In all three cases, these were described as very small, single bulls, "very shy and alert, continually scenting with raised trunks." In one instance, "one pygmy elephant left the clearing right away when a forest elephant appeared on the other side. Both species avoid



Lateral view of the mandibles of pygmy (left) and forest elephants in the collection of the Royal Museum of Central Africa, in Tervuren, Belgium. (Wolfgang Bohme.)



Lateral view of the skulls of pygmy (left) and forest elephants--from the same individuals as in previous photo. (Wolfgang Bohme.)

each other." These mature bulls had a height of 5 feet, 3 inches and 5 feet, 6 inches (1.6-1.7m) at the shoulder. Another bull had a height of almost 6 feet (1.8m).

Eisentraut and Bohme state that adult pygmy elephants are about the same size as juvenile forest elephants--leading to the belief that they are one and the same--but that they can be distinguished behaviorally as well as anatomically. "The adult pygmy elephant shows the same quiet behavior as the [adult] forest elephant," they state, "whereas young forest elephants...are very playful." It is a known fact that juvenile mammals are almost always playful; and yet the native people of Central Africa are very respectful and cautious of the pygmy elephant, saying it is more aggressive than the larger forest elephant. If pygmy elephants are merely forest juveniles, why would they describe them as more dangerous than the adults?

The German zoologists also state that juvenile forest elephants, although they may be somewhat larger than pygmy elephants, "have only unpretentious, very small tusks," while pygmy elephants have tusks measuring 2-3 feet (60-90cm). Western (above) did not give a tusk length for the supposed pygmy elephants he saw--just that they had "long tusks."

Steinfurth has also been able to add interesting linguistic information to the literature: the Pygmy people of southern C.A.R. call the bull forest elephant

kamba when single, and mombanga when accompanying cows. Juvenile males are called misimbi. The latter is very important, as they call the pygmy elephant ndimbila. If pygmy elephants are merely juvenile forest elephants, as most zoologists have maintained, why would the same ethnic group have two separate names for them?

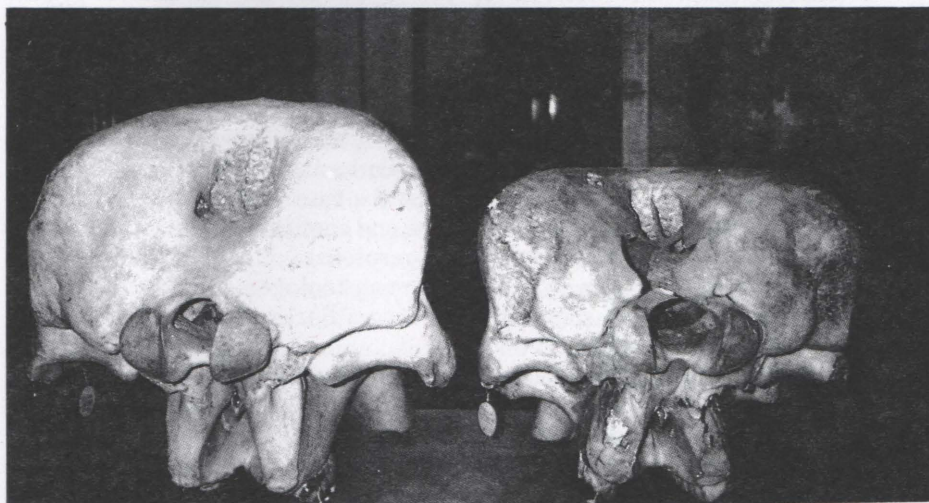
Even more evidence in support of the pygmy elephant is then presented. L.-P. Knoepfler, a French zoologist, informed Bohme of his own unpublished findings while in the forests of Gabon. Knoepfler had visited the Pygmy village of Makokou, whose inhabitants had just killed two pygmy elephants in a swampy area about a 6-hour trek away. Upon examination, he found them to be a male and female, with shoulder heights of 5

feet, 3 inches (1.6m) for the female and almost 6 feet (1.8m) for the male. Upon butchering the kills, the villagers found that, not only was the female pregnant, but that she carried a full-term fetus. "This important observation," state Eisentraut and Bohme, "...refutes the juvenile [forest elephant] hypothesis."

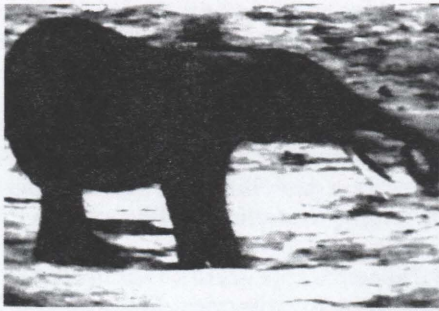
Indeed, it appears to do so. Sad as the story may be, it is critical information: it is inconceivable that a juvenile female elephant--of the forest subspecies or any other--could possibly be carrying a full-term fetus.

After presenting their anatomical, behavioral, and eyewitness evidence, Eisentraut and Bohme conclude the following: "1) The pygmy elephant is not a subspecies of Loxodonta africana because they both live sympatrically in the same geographical area...Nitch-segregation...provides an effective mechanism to isolate the species. 2) The pygmy elephant is no ecotype of the forest elephant...its smallness is not the result of unfavorable life-conditions...because the tropical rain forest is an optimal habitat for plant-eaters. 3) The pygmy elephant is not a juvenile of the forest elephant because, if it were, the fully-grown tusks, the puberty of small females, and the presence of herds would be inexplicable."

Thus, they conclude that the pygmy elephant is, after all, a species in its own right--as described by Noack in 1906 --one which has been ignored or discredited, even maligned, by the zoological establishment. They give its range as an



Rear view of the same skulls of pygmy (right) and forest elephants. Note relatively and absolutely larger foramen magnum in pygmy elephant skull. (Martin Eisentraut.)



Photograph of video still, originally from a 16-mm film taken in the Central African Republic. This is the only film sequence of a free-living pygmy elephant. (H.J. Steinfurth/Wolfgang Bohme.)

area encompassing Equatorial Guinea, Gabon, southern Cameroon and C.A.R., the northern Congo, and western Zaire.

However, their conclusions, although another reconfirmation of the soundness of the cryptozoological method, are also cause for concern. They point out that deforestation and hunting are threatening the very existence of this almost unknown species. "Man is annihilating the most imposing inhabitants of the African forest," they state, "and does not know that he is rooting out two species with one stroke."

Will the existence of the pygmy elephant now be acknowledged by the world of zoology? The differences between it and the forest elephant appear to be far more substantial than the differences between many other known species--so why not just accept its reality?

Unfortunately, there is more complexity to this question than initially meets the eye. In the first place, there is a general reluctance by modern taxonomists to accept new species unless there is solid supporting anatomical material. This is due, in part, to the unjustified proliferation of species and subspecies descriptions in the 19th century, a practice which continued into the 20th century. Very often, zoologists would rapidly describe a new taxon--slapping a new scientific name on it--based on the most meager evidence. Those zoologists were "splitters." Today, taxonomy is dominated by the "lumpers," who generally only describe new taxa after thorough comparative studies--often involving biochemical and genetic analyses.

While this conservative "lumper" approach is certainly more appropriate, it can sometimes go too far in the other direction. This is particularly so when dealing with large animals, which also happen to be the animals of particular interest to cryptozoology. Perhaps that is why many zoologists doubt the basic premise of cryptozoology--that there could still be a number of medium-to-large animal species to be discovered. In any case, there seems to be unwritten rule that, the larger the animal--such as an elephantid--the more unlikely its existence without zoology having known about it--and, in subtle, psychological ways, the more resistance to it by experts in that particular field.

Thus, although the rules of zoological nomenclature--controlled by an international commission--are democratically the same for all animals, from ant to elephant, all it takes for a scientifically described and named species to be dismissed and even forgotten is for a majority of the experts in a given field to simply ignore it for some reason--and it will essentially disappear. Many authorities merely rely on previous--often antiquated--opinions, which can keep a species in a form of taxonomic exile. Furthermore, conservation agencies would certainly never expend funds to protect a species that zoologists do not recognize by convention--regardless of what has been described and named in the zoological literature. Even the American Society of Mammalogists, in its Mammal Series accounts, only accepts manuscripts on species listed in the taxonomic volume Mammal Species of the World (see above)--and the pygmy elephant has the misfortune of not being recognized as a species therein.

Such a situation is fine if the species was only the mistaken creation of an over-enthusiastic zoologist, as has often been the case. But if the species were real, and continues to survive, it is likely to resuscitate at some future time, haunting zoologists like a restless spirit seeking a final resting place.

Apart from all this, it sometimes happens that, for some inexplicable reason, there is stronger resistance to a particular supposed animal than can be rationally explained. Sometimes the debate may take on a life of its own, causing the animal itself to become

almost mythical. The gorilla and the giant squid come to mind. Even the pygmy hippopotamus, when it was first described in 1849 based on two skulls, was dismissed by most zoologists, including the renowned British anatomist Sir Richard Owen, founder of the British Museum (Natural History). Thus, this species was essentially ignored until 1914, when Hans Schomburgk finally brought back to Germany living specimens of what had by then become a mythical animal.

We can now go to any good zoo and admire the pygmy hippo--a species that "didn't exist" not that long ago. Upon reflection, then, one may wonder what all the fuss is about. What, after all, is so improbable about a pygmy elephant?

Of course, it is a different world today, one of diminishing animal populations, and any disagreements over the status of the pygmy elephant are now far more than mere academic squabbles between scholars. If it exists--as seems to be the case--practically nothing is known about it; and its swamp-forest habitat would not rapidly facilitate an increase in our knowledge. In particular, we know nothing of its population status, and without conservation measures--which would only be undertaken once its existence is generally accepted by zoology--it could conceivably be eradicated by overhunting. Thus would disappear one of the world's largest animals--right under our very noses and without our even having given it the courtesy of official acknowledgment.

Advocates Martin Eisentraut and Wolfgang Bohme have presented a strong case on behalf of this pesky pachyderm in the court of science. Let us now hope that the jury is attentive and listening. □

"We are so far from knowing all the forces of nature and their various models of action that it would be unworthy of the philosopher to deny phenomena simply because they are inexplicable at the present state of our knowledge. The more difficult it is to acknowledge their existence, the greater the care with which we must study these phenomena."

Marquis Pierre Simon de Laplace
French mathematician and astronomer,
c. 1831

MESSAGE FROM THE EDITOR

Conformity. One of the strongest forces operating in human social systems is the phenomenon of conformity. We all more or less conform to the expected norms of our peer groups, even when we like to think that we are pretty independent-minded. Without conformity, civilization would come to a screeching halt. Individuals usually dress according to the culture or country to which they belong, drivers tend to obey traffic lights, mailpersons tend to deliver the mail, and so forth--although I have lived in some countries where some of these things barely occur!

But what happens when we get too enamored with conformity? What happens when we forget that it is merely a strategy for reaching social goals, not the goals in themselves? The result is that we become entrenched in stifling and archaic conservatism, punctuated by a smug and arrogant "know-it-all" attitude.

Very interesting, you may say, but what has all this got to do with cryptozoology? Plenty. History tells us that it was usually the curious, the restless, the nonconformists who made great scientific breakthroughs. And they were often derided in the process. I remember reading of one instance, for example, in which a young Einstein was lecturing on relativity theory when a group of physicists stormed out of the room outraged as such "unimaginable nonsense." There are many other historical examples, enough to fill this entire newsletter, and much more.

What history is telling us--if we would only pay attention--is that nothing seems to be written in stone. If things look strange, don't ignore them because they don't seem to fit into our current theoretical frameworks. Our frameworks--and concepts--change over time, and will continue to change. And perhaps that is how it should be.

I don't think that most ISC members would claim that all the supposed animals we are interested in actually exist. Perhaps very few of them exist. Perhaps none. In the big picture, it really won't matter. What will matter is that we were curious and nonconformist enough to go beyond the textbooks and

examine the situation a little more carefully. We were not content with simply nodding our heads in approval at the pontifical pronouncements of some august authority on a given subject. We were not content with simply laughing at what we thought didn't "fit" our current concepts.

And this brings me to a recent experience of my own, one which I suppose precipitated all this rambling. Some months ago, I attended the first international conference on X animals, organized and hosted by an important European institution. My own modest presentation was on gigantism in this group of animals, and the possibility of surviving fossil forms, particularly in country Y, from where there have been a number of intriguing reports.

It so happened that there were several X experts from country Y present, and some of them didn't like my presentation one bit. Obviously, to them, such fossil X animals could not possibly exist today in their own country without their knowing about it. After all, they are the local experts!

The anecdotal evidence brought forth by cryptozoology was a totally new experience for them, one that clearly did not fit into their theoretical frameworks. The result was laughter. And, of course, laughter is contagious. (I am not divulging the names of these individuals--or even the name of the conference--as it is not my intention to embarrass them, although it has to be admitted that that was their intent.)

Certainly, I have been criticized in the past over my cryptozoological interests, and some people may even have thought that I was a little whacko. However, I had never been laughed at in a public forum before. It was totally unexpected, particularly at a scientific meeting, and it caught me quite off guard. Somehow, I managed to conclude my presentation, and then handle some of the cynical questions that followed. A good scholar knows, of course, that, in the spirit of open scientific criticism, he or she has to be able to "take it," and sometimes dish it right back; and in my more quiet way I did.

I should also mention that, to their credit, several other participants--mainly Europeans (who, by the way, didn't know me from Adam)--publicly defended my presentation, pointing out that we don't always have all the answers. And the session chairman, an Englishman, kindly restricted himself to describing my talk as "provocative."

It is a strange experience, being laughed at in public. It gives one an uneasy feeling of unreality and uncertainty. Now that I have had time to reflect on it, however, I am not displeased that it happened. It has given me new insights into the complexities of social forces at work--as well as another story to chalk up to experience.

In the end, those experts from country Y, despite their arrogance, are probably correct in stating that such fossil X's don't survive. If so, they are correct through the medium of an emotional, raw, gut response to a negative stimulus. I'd rather not be right or wrong. Just curious.

J. Richard Greenwell
Editor

JOE WOLFSKILL

The Secretariat has only recently learned of the death, about two years ago, of Benefactor Joe Wolfskill, who had had a long-time interest in cryptozoology and had been a collaborator of ISC President Bernard Heuvelmans. Our sympathies go to his widow Bette, who continues as a Society Benefactor.

NOTICE

Several damaged or water-stained issues of the journal *Cryptozoology* are available at half-price, \$9 each, postage included. The available issues are Vols. 2, 3, 4, 5, and 7. Interested members should contact the Secretariat immediately, as it is a first-come, first-served situation.

"God does not care about our mathematical difficulties. He integrates empirically."

Albert Einstein
German theoretical physicist
In L. Infeld, *Quest*,
Gollancz, London, 1942

HAROLD E. "DOC" EDGERTON, 1903-1990

We regret to announce the death of Harold "Doc" Edgerton, inventor of the strobe flash and long-time participant in Loch Ness research. He died of a heart attack at age 86 on January 4, 1990. Edgerton was an MIT engineering professor emeritus, and had been associated with MIT since becoming a student there in 1926. His "frozen" photographic images--such as a bullet piercing an apple--became world famous. His latest book, Stopping Time, was published in 1987.

The following obituary was prepared by his close friend Robert H. Rines.

Once in a blue moon, a person of unusually creative talents moves among us and engenders a compelling curiosity coupled with insights and inventions that inordinately enrich our lives. Add to that the attributes of a willing and inspiring teacher, the courage of an underwater archaeologist and explorer, the open-mindedness to challenge the improbable, a keen sense of humor, a sincere modesty, and a warm and abiding friendliness for humanity, and the total uniqueness of Harold Eugene "Doc" Edgerton bursts forth.

Children and adults the world over have learned how Doc made time "stand still"--capturing on film a bullet shattering an apple or a light bulb, a milk drop splashing a coronet of spray, or hummingbird wings stopped in flight--all by the electronic flashing stroboscopic light he invented at the Massachusetts Institute of Technology



Robert Rines (left) and Doc Edgerton during their 1989 Loch Ness experiments. "All I did was put it in a bottle."

(MIT) in the late 1920's. That technology, moreover--now commonplace in industry and taken for granted in nearly every modern camera--inadvertently bridged science and the humanities, if only because the technical accomplishments of stop-motion gave serendipitous rise to stunning works of art gracing many of the world's museums, and to aesthetic real-time effects in theater and disco alike.

During the war, Doc Edgerton made possible aerial night flash photography--undetectable to the Germans--that provided, for example, vital intelligence needed for the Allied landings on Normandy in June, 1944. The same techniques revealed the sunken Civil War ironclad Monitor off Cape Hatteras--aided by side-scan and "pinger" sonar that Doc subsequently developed to help his friend Jacques Cousteau probe the existence and shapes of objects on the seabed; and another friend, yours truly, to search out elusive targets in Scotland's Loch Ness. It was, indeed, the Edgerton elapsed-time strobe camera with which the Academy of Applied Science (AAS) recorded electrifying objects in Loch Ness in the 1970's.

Together with his students, the late Kenneth J. Germeshausen and Herbert E. Grier, Doc founded the firm E.G.& G., now widely diversified, but initially involved in the study of atomic weapons testing and performance; in the pulsing systems for radar and the now commonplace flashing beacon lights of aircraft and airports; and the flashing systems for office copying and print-composing machines, among others.

I remember, within recent years, Doc calling me once at my law firm saying: "Bob, I've just realized that there was earlier prior work in the field of flash stroboscopy." Appalled, I queried as to the prior inventor. His answer: "Why, God of course, when he created lightning. All I did was put it in a bottle."

On a personal note, it was my father, David Rines, who staked a young Edgerton to patent and legal services for his pioneer strobe inventions. Little did I suspect--as a youngster taken by my father to Doc's MIT lab to see the

wizardry of stroboscopic displays and wonders--that a decade later Professor Edgerton would be counseling me as a physics undergraduate, or still later accepting me as his patent lawyer for his post-war flash and sonar inventions, and as E.G.& G's first patent counsel; and even later collaborating with me on joint sonar inventions and experiments related to the hunt for the Loch Ness Monster. That venture was stimulated by our mutual friend, the late Tim Dinsdale.

Concerning Loch Ness, Doc at first gently humored me, and then, to the last week of his life--in January, 1990--hounded me to devote more urgent and expansive time to answering the question as to what large, unknown animals inhabit the loch. He knew it was a difficult task. "Getting to the Moon was easy compared to this," he used to say.

And similar stories can be related by Charles Wycoff, Martin Klein, and Bob Needleman, among others, who also were part of what became the Edgerton "family," and who also became infected by the Scottish mystery and are today determined to follow Doc's exhortations and bring new AAS insights to this research.

Again, from my personal viewpoint, the honor to have presented him for the National Inventors Hall of Fame induction in Washington, and to deliver the Edgerton Address at the recent Society of Photographic Scientists and Engineers Convention in Boston, is only surpassed by the deep friendship that we developed. This was so poignantly exemplified by the pains he took to inspire my children Suzi, Rob, and Justice, my grandchildren Lisa and David, and my niece Lucy, with the wonders of his work and humanity--the same philosophy he imparted to his own grandchildren.

Doc's personal support of my founding of AAS, as a board member and participant, and as a benefactor and supporter of my efforts in founding our nation's first technology-oriented law school--the Franklin Pierce Law Center, in Concord, New Hampshire--lives on in the quality activities and developments of these institutions--and, of course, at his beloved MIT.

With this myriad of achievement and international recognition, how sweet it was that Doc and his wife, Esther, joined me and Carol and our son Justice in July, 1989, to accept the hospitality at Loch Ness of our dear Scottish friend Gordon MacKintosh. For that proved to be Doc's last research effort: testing his latest suggestions for a sunlight-operated elapsed-time underwater camera. And how fitting that the journal Cryptozoology, in its 1989 issue (Vol. 8),

was the home of the last technical publication of this great person.

A world of former students, colleagues, and friends will sorely miss Doc's ever-enthusiastic spirit. This spirit, however, is now firmly instilled in so many of us who survive.

Robert H. Rines
Concord, New Hampshire, U.S.A.

CAPT. GOOSEN DIES

It is with deep regret that we must announce that retired fishing trawler skipper Captain Hendrik Goosen, of East London, South Africa, died at age 85 on January 5, 1990.

It was on December 22, 1938, that Captain Goosen's nets brought up a "strange fish" off the Chalumna River, which he saved for Marjorie Courtenay-Latimer of the East London Museum. The fish turned out to be a coelacanth--thought extinct for about 80 million years--and was described the following year as Latimeria chalumnae by J.L.B. Smith.

The find caused a worldwide sensation, but Captain Goosen was characteristically modest about it to the end. Miss Courtenay-Latimer, his lifelong friend, stated in a 1989 interview with the Editor: "Captain Goosen was never fully recognized, and I always felt that without Captain Goosen there never would have been a coelacanth."

The Spring, 1989, issue of the Newsletter is dedicated to the coelacanth and the full story of its discovery, and includes interviews with both Captain Goosen and Miss Courtenay-Latimer. The 1989 issue of Cryptozoology (Vol. 8) contains Miss Courtenay-Latimer's own article on the discovery--the only one she prepared to mark the 50th anniversary of what many have called the zoological discovery of the century.

CRYPTOLETTERS

The Editor welcomes letters from readers on any topic related to cryptozoology, but reserves the right to shorten them or make slight changes to improve style and clarity, but not meaning.

To the Editor:

I would like to add a postscript to the tale of the New Zealand Globster (Newsletter, Autumn, 1988).

This case was discussed in The Leviathans by the late Tim Dinsdale, who listed it as Oddity No. 8 in chapter 4. His first reference was the Townsville Bulletin (Australia) of March 24, 1965. Professor Morton was quoted as stating: "The object has a tough quarter-inch thick hide. Under this is what appears to be a layer of fat, then solid meat. Hair 4 to 6 inches long covers its length. Cut from the hide and washed clean, the hair

has a soft, woolly texture."

Dinsdale then quotes from a letter from Miss J. Robb, senior lecturer in zoology at the University of Auckland: "Certainly, the photographs...seemed to show densely matted fibres, several inches long. When I examined some of these fibres myself, however, it was obvious that they were long strands of fibrous connective tissue--all that remained of the outermost few inches of blubber, the softer parts of the tissue having been either chewed or shredded by small fish, etc., or eroded away by the action of sand and water. While identification of the exact species (of whale) was not possible, it was most likely to have been a humpback."

This conclusion sounds plausible, but I hope the Bermuda Blob receives a more thorough examination, so that future generations will not be left wondering.

NEW FIELD MEDICAL ADVISOR

The Board of Directors has moved to appoint a Field Medical Advisor within the Society. The volunteer post will be taken up by Michael J. Manyak, M.D., of the George Washington University Medical Center, Washington, D.C.

ISC members planning fieldwork are welcome to communicate with Dr. Manyak for advice on medical/health care matters. Dr. Manyak, who is also affiliated with the National Cancer Institute, in Bethesda, Maryland, is able to provide information on what inoculations are needed for what countries, as well as more obscure but potentially important medical advice. In particular cases, he will be able to prescribe drugs or other controlled substances for use in the field, and will also be in a position to facilitate emergency medical evacuation from hazardous areas of the world.

This new ISC consultation and advisory service is available to all members at no cost, regardless of whether the fieldwork is to be conducted within the United States or elsewhere. Although the service is optional, members planning expeditions, particularly to tropical areas, are strongly urged to consult with Dr. Manyak before departing. His address is: Department of Urology, George Washington University Medical Center, 2150 Pennsylvania Ave., N.W., Washington, D.C. 20037. Tel: office, (202) 994-4002; home, (301) 270-8431. □

Incidentally, Dinsdale gave the year as 1965, whereas the Newsletter stated 1968. As somebody has obviously written a wrong date, would the Editor care to check his sources and settle the matter?

Malcolm Smith
Brisbane, Queensland
Australia

Mr. Smith's postscript is appreciated. The Dinsdale information was, of course, available to the Editor all along--had he thought of looking in that particular book. The record now shows that, in all three cases (the Tasmanian and New Zealand Globsters and the Florida 1896 carcass) the organic material was dismissed by different authorities as having come from

whale strandings—but without the support of biochemical analyses. Maybe they were whales, and maybe they weren't. With the Bermuda Blob, opinions are being withheld until after such analysis. Some Blob tissue has meanwhile been obtained by Eugenie Clark during a trip to Bermuda, and analysis is being carried out.

Concerning the year of the New Zealand stranding, one source did indicate 1968. However, further checking verified that 1965 is the correct year.—Editor

To the Editor:

Concerning the Tasmanian Globster, of which you did not have a printable picture at press time, I would like to call your attention--and that of the membership--to the fact that a photo of this Globster appears in the book Living Wonders: Mysteries and Curiosities of the Animal World, by John Michell and Robert J.M. Rickard (Thames and Hudson, London, 1982; New York, 1983).

Martien't Mannetje
Rockanje, Holland

To the Editor:

The article on the Bermuda Blob and the southern Pacific Globsters failed to mention an enormously bulky creature with huge protruding eyes-- and what was were described as "large scaly feet"--which washed ashore at Machrihanish, Mull of Kintyre, Scotland, on September 30, 1944.

The decomposing body measured 30 feet in length, and had gaping wounds on its side. Unfortunately, as it was during the war, no one was available to carry out a scientific examination, and the unidentified animal was later carried out to sea. Photographs of this organic mass show that it closely resembled the remains of the New Zealand Globster discovered in 1965.

Gerald L. Wood
Witham, Essex
England, U.K.

Gerald Wood is the author of The Guinness Book of Animal Facts and Feats--see back page. --Editor

To the Editor:

I read with great interest your interview with John Green on the Sasquatch. I appreciate Mr. Green's concerns. However, as a professional zoologist in an academic context, I wish to clarify what I feel the differences may be between Mr. Green's perception of lack of interest from the scientific community and the fundamental undercurrent of skepticism that runs through science. It is not necessarily so that zoologists do not want to believe, but that, until incontrovertible evidence exists, acceptance in a formal sense cannot occur.

I think that many zoologists are willing to keep an open mind, but the context of such controversial subjects must be borne in mind when thinking about how present-day zoologists must operate in order to support their research. To gain access to research funding, it is necessary to propose research programs that have the probability of leading to significant results based upon a strong background of empirical theory. No matter how we may feel about a lack of enlightenment in some areas that we think are of some degree of significance, we must be realistic enough to realize that the quest for funds for "fringe" projects, of whatever type, is likely to be fruitless when sought from the public purse.

Research zoologists must devote almost all of their time to their teaching, service, and research duties, and interests in fascinating but "marginal" (in a strictly scientific context) topics must be restricted in such a way that their mainstream duties and activities remain unaffected. There is, of course, a good dose of conservatism in such an approach, but it is one bred out of realism.

The history of science is one of change, but with the underpinnings of skepticism so that change only occurs and is only acceptable when the body of evidence is sufficiently compelling to allow for repeatable observations to be made (in this case, based upon specimens). For most zoologists, who are not directly involved with Sasquatch, primates, or even mammals, there is no vested interest in whether Sasquatch exists or not. I do not think that they necessarily disbelieve, but they have not been presented with evidence that would

cause them to believe. When it is presented, they will believe--there will be no reason not to.

For those working in areas that are closer, in a disciplinary sense, there is enough struggle to gain the necessary funds and time to work on their primary research program. They may be inherently more skeptical than those more distant from the field, but, again, they would have no reason not to believe once the evidence is there. I do not think, however, that there should be an expectation that research and teaching careers should be sacrificed on such quests with (admittedly) enormous logistic and financial problems, and with minimal prospects of success.

I have ongoing interests in cryptozoological pursuits--not as dramatic as those relating to Sasquatch, perhaps--but nonetheless fascinating. Subsequent to piecing together information about the possible existence of a giant gecko in historical times in New Zealand, Aaron Bauer and I attempted to get New Zealand zoologists interested in searching for this species--for which there is tangible physical evidence in the form of a type specimen. The interest level generated was minimal.

Dr. Bauer and I made a reconnaissance trip--at our own expense--to likely habitats in New Zealand to determine if its existence was feasible, and we feel that it is. Local professional interest, however, has remained marginal, and I can appreciate why. If the animal does not turn up, the search is fruitless; if it does turn up, it is then time for the local scientific community to take over. While this may be personally deflating, it is really the only way things can be. Funds will not materialize until the evidence is there to justify them.

Thus, while skepticism may be disappointing, it is, to my mind, rather understandable, both in the context of the availability of tangible evidence and in the context of the realism of fundraising and logistics of research program design. Until appropriate evidence exists, interested indifference is perhaps the only response that can be expected from the zoological community in general.

In closing, I would like to add that I

find the suggestion of "getting it [a Sasquatch] across the Canada- U.S. border surreptitiously," should a specimen be found in this country, to be deplorable. Wherever the "best-qualified persons" are to do the work, hopefully there is sufficient recognition of this that they would be invited to do so, regardless of where a specimen is located.

Are our hard-fought battles to provide some degree of protection to our native flora and fauna to be instantly disregarded by the scientific community if the prize is great enough?

Anthony P. Russell
Department of Biological Sciences
The University of Calgary
Calgary, Alberta, Canada

To the Editor:

In view of the debate in previous newsletters about the rights and wrongs of killing specimens of undescribed species, your interview with John Green (*Newsletter* Summer, 1989) strikes what I consider to be a very unfortunate note.

I do not wish to get involved in the arguments about the morality of shooting "one specimen only as a method of proving that the species exists," as Dr. Krantz suggested in a letter in the same issue. However, what Mr. Green is advocating is that every hunter in North America should kill a Sasquatch on sight, which could lead to the deaths of hundreds of specimens before protection could be implemented.

He justifies this on two grounds: that the animal is not endangered, and that it is not a member of the genus *Homo*. I do not think that either statement can be supported, except as a piece of special pleading for the hunting lobby. After all, the only other large, tailless primate that we know of--the human--does

belong to the genus *Homo*, and it requires more than guesswork or prejudice to establish our relationship to an unknown species with the same characteristics.

The fact that the Sasquatch has so far eluded hunters suggests that its numbers may be very small indeed, a possibility supported by Valentin B. Sapunov's research report in Vol. 7 of *Cryptozoology*, which shows that the population characteristics of the Soviet "wildman" are those of a species under severe pressure. Temperate coniferous forests could hardly have supported a dense population at any time, and although hunting has so far not caused serious losses, there may be other ways in which human activity has already driven the creatures, if not to extinction, at least to a low point in a population cycle.

Logging may disturb them and reduce breeding success, while if they are closely related to humans, they may have the combination of susceptibility and lack of immunity to our diseases that so affected the native American Indians. This would account for their apparent disappearance from populated localities in Asia, as well as their extreme elusiveness. Thus, it is not hard to see what the killing of even a few individuals without consideration of their reproductive status might do to their future prospects.

Christopher J. Peers
Birmingham, England, U.K.

To the Editor:

In 1959, Daniel P. Mannix wrote a good account of the Roman games in his book *Those About to Die*. He mentioned that the Romans obtained some sort of bear from East Africa, and that the natives of Kenya still talk about a bear-like animal there. Has anybody

ever looked into this?

Richard Weil
Bloomington, Minnesota, U.S.A.

The "bear" Dr. Weil refers to is, of course, the chemosit or Nandi Bear. The Editor happens to have this book in his library. Mannix also stated: "There are no bears in Africa today...but the Romans did get a "bear" from East Africa and Nubia. What was it? We don't know ... Recently, the site of a Roman 'trapping station' has been found in this locality. Perhaps the Romans' 'African bear' still exists."

As the Editor had never seen reference to supposed Roman presence as far south as Kenya, he queried ISC President Bernard Heuvelmans, who responded as follows:

"The report by Mannix of a Roman trapping station found in Kenya is sheer nonsense. Even the Egyptians only very rarely reached the Great Lakes region. I consulted a specialist on the history of East Africa, and all I can determine is that there have been very wild tales about a Roman legion which got lost in Kenya --and this to explain why certain Kenyan people wear sandals! Mannix does not support his statement with a source in his bibliography."--Bernard Heuvelmans, Le Vesinet, France

"When I get a little money, I buy books; and if any is left, I buy food and clothes."

Disderius Erasmus
16th century Dutch Catholic priest, humanist, and writer

"Learning isn't a means to an end; it is an end in itself."

Robert A. Heinlein
American science fiction writer

The ISC Newsletter is not issued for permanent scientific record, and thus, for the purposes of zoological nomenclature, does not fulfill the criteria for publication as defined in the International Code of Zoological Nomenclature.

Archival Material: Members are urged to send to the ISC Secretariat copies of cryptozoology-related newspaper reports, popular magazine articles, and scientific papers. Recently published material is particularly welcome, but old and obscure items are also of interest. It is better for the Secretariat to have two or three copies of an article than none at all; so, when in doubt, send. All submissions should clearly indicate a full reference; e.g. name of publication, date, and--in the case of scientific papers--volume and page numbers. In most cases, because of the volume of mail, members will not receive an acknowledgment of receipt, but all items submitted are carefully read, are often used in the *Newsletter*, and are preserved for posterity.

WOOD'S ANIMAL FACTS

The largest member of the order Pinnipedia (c 34 species in three families including sea lions, fur seals, true seals, and the walrus) is the southern elephant seal (*Mirounga leonina*), which inhabits the circumpolar sub-antarctic islands and the coast of Patagonia. Adult bulls average 14-16 feet (4.3-4.9 m) in total length (snout to tip of hind flippers) and weigh 4,000-5,000lbs (1,814-2,268kgs). Adult cows, who do not possess the characteristic proboscis of the bull, are much smaller, averaging 10 feet (3.1 m) in total length and weighing about 1,500lb (680kg).

The largest accurately measured southern elephant seal on record was an enormous beachmaster killed in Possession Bay, South Georgia, on February

28, 1913, and subsequently examined by Murphy (1914). It measured 21 feet, 4 inches (6.5 m) after flensing (original length c 22 feet, 6 inches [6.9 m]), and must have weighed 4-5 tonnes. An animal this size could tower up to 10 feet (3.1 m) in height.

Another exceptionally large bull shot by Herbert Mansel 45 miles west of the Falkland Islands in 1879 measured just over 21 feet (6.4 m), and "must have weighed several tons." The skeleton of this pinniped is (or was) preserved in the Museum of the Royal College of Surgeons in London.

Of 226 elephant seals shot at South Georgia by Laws (1953), the largest bull measured 18 feet, 1 inch (5.5 m) over

the curve of the back (c 17 feet, 2 inches [5.23 m] straight line measurement). Another bull measured photographically at Signy Island was 20 feet (6.1 m), and an even larger individual was observed but not measured.

There are old records of beachmasters measuring 25 feet (7.6 m) and even 27 feet (8.2 m), but although there is a tendency to over-estimate the size of the animal, Laws says "it is possible that formerly the bull elephant seal reached a greater size than at present." Today, however, bulls rarely exceed 18 feet (5.5 m).

Abstracted from:

The Guinness Book of Animal Facts and Feats, by Gerald L. Wood, Guinness Superlatives, Enfield, U.K. (3rd ed.), 1982.

Field Medical Advisor: Michael J. Manyak, M.D., Department of Urology, George Washington University Medical Center, 2150 Pennsylvania Ave., N.W., Washington, D.C. 20037.

Honorary Members: Andre Capart (Belgium); Marjorie Courtenay-Latimer (South Africa); John Green (Canada); The Lord Hunt of Llanfair Waterdine (U.K.); Marie-Jeanne Koffmann (U.S.S.R.); Ingo Krumbiegel (Germany); Theodore Monod (France); Robert Titmus (Canada).

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